

SHADING AND TEXTURING 3-DIMENSIONAL  
COMPUTER GENERATED IMAGES

ABSTRACT

A method and apparatus for shading and texturing 3-dimensional computer generated images deals with punch through textures by supplying data defining a group of surfaces representing each object in the image. For each elementary area of the display, a depth value is generated for each surface of each object in dependence on the distance of that surface from an image plane. Shading and texture data is applied to the surfaces. A determination is made as to whether or not any texture applied to a surface is fully opaque. The depth values are stored for opaque textures at the appropriate elementary areas. The depths of surfaces from subsequent objects are then compared with depth values for the opaque objects at elementary areas and, surfaces or subsequent objects for elementary areas which have a fully opaque surface closer to the image plane than the surface being considered are discarded.